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ACADIAN SOUTH LOUISIANA

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GENERAL VIEW OF THE REGION

Acadian South Louisiana, commonly known as the Attakapas District, lies south of the thirtieth parallel of latitude. The Atchafalaya and the Mermentau rivers mark the eastern and western boundaries respectively. The southern limit of the region is the Gulf of Mexico, while the northern limit is the Avoyelles District (Fig. 1).

This region lies wholly within the Gulf Coastal Plains Physiographic Province. The topography is monotonously level with the exception of gently rolling hills in the north central part. As one travels eastward from these hills, he encounters the cypress swamps of the Atchafalaya River basin; westward, the coastal prairie, and southward, the almost impenetrable salt marshes bordering the Gulf of Mexico. The swamp land is covered by water and subject to overflow from adjacent streams. Such half-solid, half-fluid areas have no agricultural value, but support a forest growth so dense with cypress, tupelo, gum, water oaks, ferns, palmettos, and a network of vines that the appearance is similar to that of the jungles. The few people who live in the swamps are trappers, hunters and fishermen. They are scattered along the many bayous and live in house boats, palmetto tents (Fig. 2), and poorly constructed frame houses. To fully appreciate this setting, one must have traveled thru the network of rivers, lakes, and bayous, penetrable only by boats which ply their way thru the "liquid mud."

In consequence of the fertile soil of the alluvial basins, the loess soil areas, and the prairie land, the majority of the people in Acadian South Louisiana live in the areas north of the marsh land and west of the swamps where the genial climate admits profitable production of rice, sugar cane, cotton and corn. The survey made in this paper is confined to these areas.

EARLY SETTLEMENT

Tourists are immediately and greatly impressed by the predominance of French names in South Louisiana and by the many customs of French origin. The French stamp that this section now bears dates back to the eighteenth century when the Acadians landed at the site on Bayou Têche now called St. Martinville (Fig. 3). These settlers were deported from Nova Scotia by the English in 1755, because they were unwilling to take oath to the English flag "unconditionally." They were mercilessly driven on board boats and scattered in the English colonies from New Hampshire to Georgia. The exiles could not be absorbed in a population where hatred was mutual. Consequently, their faces were turned by preference to Louisiana where, as they believed, the French flag was flying, and where they could toil undisturbed by English oppression. The first mention of their arrival is dated 1757. Captain Antoine Dautrieve in 1765 made a gift of "one bull and five cows with calves" to each Acadian family that settled in the prairies of Attakapas and Opelousas. Here the Acadians built their homes of logs and started little farms. "Their descendants," says Alcée Fortier, "are to be found in every parish of lower Louisiana, but these vast prairies of Attakapas and Opelousas are particularly theirs and here they have outnumbered the haughtier Louisianian who endeavors to withhold from him the proud appellation of Creole."[1]

FIG. 1. The Acadian South Louisiana Region.

[1] The Creoles are French-speaking natives of Louisiana of combined French and Spanish ancestry. The term is used to distinguish both the immigrants direct from France and Spain, and the descendants from either the pure French or pure Spanish. In order

EFFECTS OF EARLY ISOLATION

Because of wide swamps, deep rivers, innumerable bayous, and remoteness from the American frontier of settlement, these remnants of exiles were practically isolated from outside influences. This isolation from other influences intensified the natural characteristics of the Acadians and tended to develop a homogeneous people. Characteristics that were transported from Nova Scotia have been passed on by heredity. When the Creoles settled in South Louisiana, they did not mix with the Acadians, due to the social and cultural abyss separating them. The proud, indolent, pleasure-loving Creole refused intermarriage with his less fortunate kin. When the American element moved into this region, there was no intermingling of these newcomers with the Acadians. The Americans had nothing in common with the simple peasantry of the Acadian settlement. These circumstances preserved the purity of the Acadian blood in South Louisiana to a surprising extent. So complete has been the isolation of these people that during the World War, the companies of Acadian recruits in the draft army had to be drilled by French-speaking officers.

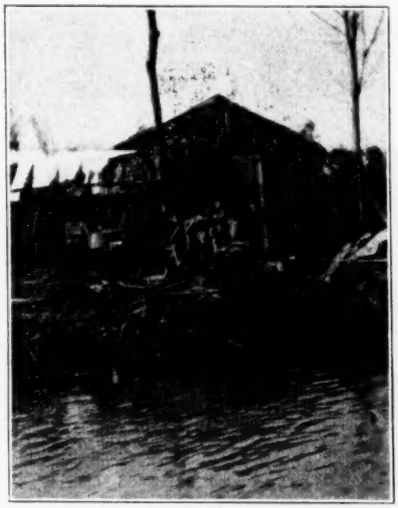

FIG. 2. A palmetto house in which trappers live.

M. Leon Vallas[2] of Lyon, France, employed by the French Government to keep alive an interest in French language in America, stated that the people of Southwest Louisiana, because of their isolation, had retained a purity of accent surpassing that of the true Parisian. However, because of the late introduction of public

to lay claim to the appellation of Creole, one must have both Spanish and French blood in his veins. Some writers have erroneously used the term "Creole" to imply persons of white and black parentage. Such an error is intolerable.

Louisiana is called the Creole state because the direct descendants of the French and Spanish colonists form an important element of the population. This element enjoys the highest social privileges of the state.

[2] Thru the efforts of M. Vallas, a class has been organized where those interested may take French lessons without charge. The French Government is financing the project.

schools and because of the lack of contact with educated people, the Acadian, commonly called *Cajun,* has evolved a *patois* that cannot readily be understood by the native Frenchman. Unconsciously Anglicisms and localisms have crept into their vocabulary, giving rise to an interesting and picturesque dialect.

When children from French-speaking communities enter school, they have no knowledge of English, because only French is spoken

Fig. 3. Moss-covered oaks fringe the picturesque Bayou Têche. The first Acadian settlement was made on the banks of this stream.

in their homes. Stores in all Acadian Louisiana require *la bilinguisme* (the double-tongue) for business to accommodate the retiring French-speaking white as well as the colored habitant.

Characteristics of the Acadians

"A race or tribe develops certain characteristics in a certain region, then moves on, leaving the old abode but not all the accretions of custom, social organization and economic method there acquired. These travel on with the migrant people. . . .

Ideas especially are light baggage, and travel with migrant peo-

ples over many a long and rough road. They are wafted like winged seed by the wind. . . . "[3]

This kind of influence is well represented in Acadian South Louisiana. The Cajuns are a virile, home-loving people. There is left "a progeny of descendants innumerable." The Acadian marries early, settles near home, and has a large family just as his ancestors did in Nova Scotia. These people glory in large families of thirteen and fourteen children. One Cajun family in Vermilion Parish now numbers twenty-two living children. The number of Acadians in Louisiana increased from 4,000 in 1804 to 30,000 in 1860 and 50,000 in 1924.[4] One man remarked that he had seven children and all were married, but none lived farther away than a small town ten miles distant. Very few Cajuns ever leave the state for permanent residence.

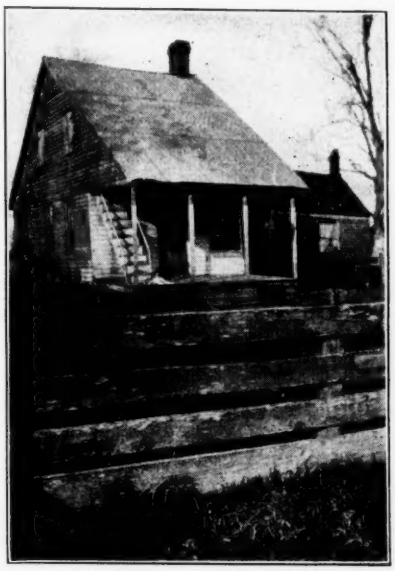

FIG. 4. The poorer tenant ekes out a bare existence in a bare looking home. Note the staircase—a relic of French architecture.

These people are indisposed to change. The Tax Commission Report of 1930 indicated more than 900 buggies in a single parish of Lafayette. These buggies make driving at night in automobiles a somewhat hazardous undertaking in spite of the flickering light of a lantern attached to the vehicle.

The richest looking structure in each community is the church, which stands out in bold outline against the sky as evidence of a great religion. The undying faith in the church and in the curé, guide and councilor to his faithful flock, and their absolute belief in miraculous events attributed to the intercession of patron saints are among the most outstanding traits of the Acadian descendants.

It is a mistaken idea that all Acadians are ignorant, unintelligent or of a low class. It is true that those from remote sections

[3] E. C. Semple. Influence of Geographic Environment, pages 25-27, Henry Holt & Co., N.Y. 1911.

[4] Emile Louvrière. La Tragédie d'un Peuple, page 268, Librairie Henri Coulet, Paris. 1924.

have deteriorated pitifully thru consanguineous intermarriage. Nevertheless, some Acadians have risen to the highest offices of the state. These eminent men show the good element in some of the Acadian ancestry. But as a rule, these people are lacking in ambition. They are a laborious race and appear to be satisfied with "their small patch of cotton and sons."

Altho people have come in from the north, the east and from foreign countries bringing with them different ideas, customs and language, the region in South Louisiana in the vicinity of Bayou Têche, where the Acadians first settled, has remained for nearly two centuries distinctly French.

Characteristics of Human Habitation

Ellen Churchill Semple said, "Geographic conditions influence the economic and social development of a people by the abundance, paucity, or general character of the natural resources, by the local ease or difficulty of securing the necessities of life, and by the possibility of industry and commerce afforded by the environment." Likewise, one finds these geographic factors affecting the size of the social groups in Acadian South Louisiana. The rural population is about three times greater than the urban population. However, no part of the region feels the pressure of population.

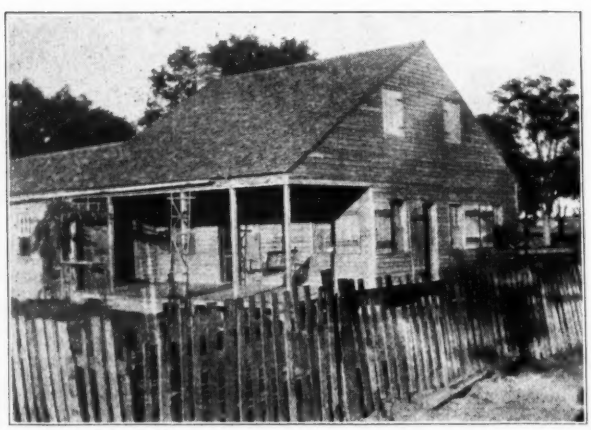

FIG. 5. Home of the better class tenant. Wooden shutters indicate French influence.

In the marsh zone of limited resources (Fig. 6) the population is scattered. A few towns not exceeding 9000 border the zone. St. Martinsville, once the "Little Paris" of Acadian Louisiana has now lost much of its past social and economic significance because of the few inducements this town has offered to highway and rail transportation facilities. Likewise, it lies slumbering on the historic banks of the Bayou Têche while nearby towns are rapidly growing. The city of Lafayette, located on relatively high land, is the focus of social, industrial and educational activities. The popu-

lation of this city has doubled in the last ten years. Lafayette Parish marks the transitional zone of the rice, cotton and sugar cane areas. Consequently, the city of Lafayette has profited thereby.

Because of the fact that each rice farm contains many acres, the population is scattered in the prairie zone. Crowley, a city of 7656, represents a different composition of people since it lies on the western rim of the periphery of Acadian South Louisiana. This city was settled by mid-western wheat farmers. Consequently it bears a decidedly different personality from the overwhelmingly French Lafayette.

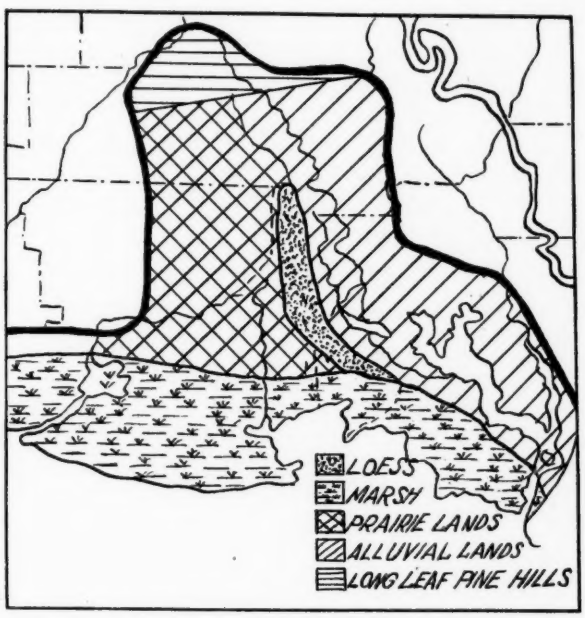

FIG. 6. Classes of land in the Acadian Region.

These larger towns are located on the most important routes of travel. The pattern of these routes is adjusted to topographic conditions and reflects the history of the region. In the alluvial zone where the Acadians first settled, the roads follow the streams to a great extent. However, due to a recent good-road program, many of the roads have been straightened. The roads of the more recently settled prairie rice-growing area follow north-south and east-west lines. In many cases the roads coincide with the section lines. The old Spanish Trail, connecting Los Angeles, California, with Jacksonville, Florida, extends thru the entire southern part of Louisiana. Thruout the whole area, paved and gravel roads are used by freight and passenger traffic. In order to save both time and expense, many merchants and farmers are using the truck and the bus as means of transportation.

CLIMATE

It is not surprising that the Acadians preferred self exile to enduring English control and suffering the rigors of the inhospitable climate of Nova Scotia.

The semi-tropical climate of South Louisiana is characterized by a high mean annual temperature and abundant precipitation. The summers are hot and humid; the winters, chilly and rainy with infrequent destructive cold waves; the autumns, cool and delightful; and the springs, mild with numerous showers. The seasons are not so sharply defined as in more northerly latitudes. Spring may come in late January or February when the trees, flowers and all growing things are often injured by freezing temperatures. However, this region has an average growing season of over nine months, permitting the growth of several crops in the same field in one year.

SUCCESSION OF AGRICULTURAL DEVELOPMENT

When the Acadians first came to Louisiana, they settled along wooded streams. There they planted crops, developed small herds of cattle, constructed their own homes and made their own cloth. They were in every way pioneers who supplied all the needs of their simple existence. They were not an enterprising people; their wants, in addition to their needs were supplied from pasture with little labor and expense. These hard-working peasants seemed to be contented with no luxuries. Ordinarily only subsistence crops such as Irish potatoes, corn and garden vegetables were grown. Progress in diversification of agriculture accordingly was slow.

Little immediate change came about in agricultural development even with the introduction of cotton and sugar cane in 1800 and 1825 respectively. Not until 1895 when the farm machinery of the middle west was introduced in the rice fields, was the commercial production of rice successful. This machinery revolutionized the rice industry. Farmers poured in from the wheat fields and started the production of rice on a commercial basis. Once the Acadians were brought to acceptance of machine practice and the canal system of irrigation, rice became the most successful crop and brought about a utilization of the seemingly worthless prairie land.

CONTRASTS IN TYPES OF FARMING

Altho the most important industry of Acadian South Louisiana is agriculture, there are marked contrasts in its practice in the different sections of the region, and in the proportionate amounts of land used for the major crops. In the prairie areas (Fig. 6) the greatest amount of land is used for the production of rice. The proportionate amounts of land for different crops is illustrated in Acadia Parish, a typical area; rice 98 per cent, cotton 5 per cent,

corn 3 per cent and all other crops 1 per cent. In the northern and central part of the alluvial area, the cash crop is cotton with some corn as a cash and subsistence crop. The proportionate amounts of land used for these crops are in marked contrast with those of the prairie land. Such a contrast is illustrated by the percentages from St. Landry Parish, a typical area; cotton 43 per cent, corn 40 per cent, sweet potatoes 3 per cent, rice 6 per cent, cane 1 per cent. In the southern part of the alluvial zone sugar cane is the predominating crop (Fig. 7) as evidenced from results in a survey of 100 farms in the district. The total sales of those selected were: sugar cane 96 per cent, Irish potatoes 2.1 per cent, other crops over 1 per cent.[5]

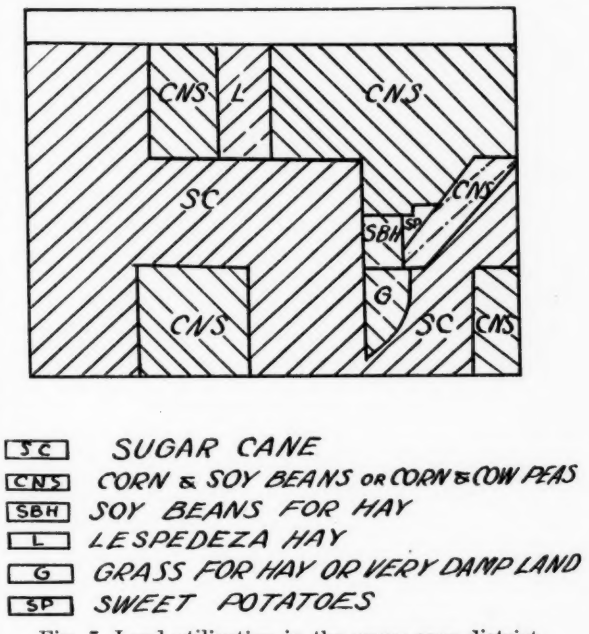

Fig. 7. Land utilization in the sugar cane district.

In addition to the major field crops as is seen by the above percentages, practically every farmer grows some subsistence crop such as beans, peppers, okra, strawberries and citrus fruits. The pecan industry is proving to be a most successful undertaking. However, the combined acreage of all such crops and the income derived from them are practically negligible when compared to the acreage and income of the major crops, cotton, sugar cane and rice. As one travels thru this region, he is impressed by the prevalence of the one-crop system of farming and the lack of uniformity in the major crops in so small a region.

SUMMARY

Agricultural activities are dominant in Acadian South Louisiana, and will probably continue to hold first rank indefinitely. The

[5] Louisiana Agriculture, Progress and Opportunity, Extension Circular, No. 89, p. 26. Baton Rouge, La. 1924.

dominance of these activities is related to the outstanding facts of the natural environment: climate, soil fertility, native vegetation and transportation facilities.

There are great possibilities for the agricultural industry. The parishes included in this survey constitute 3,717,460 acres and only 43 per cent is in farms. The remainder possesses thousands of acres of arable and wet land capable of extensive cultivation should the demand arise. Because of the great variety of soils in this region, many crops are profitably produced. Rice is grown in silt loam underlain with impervious subsoil while cotton, cane and corn are produced on the rich alluvial soil of the river valleys. The equable climate with about ten months growing season permits vegetables, pecans, melons, small fruits and dairy products to be successfully produced. However, the major crops, cotton, cane and rice are being most affected by the economic crisis, recent adverse climatic conditions, labor supply and the changing tariff. The value of farm property has subsequently declined about 50 per cent in the last decade. Owners of large plantations have gone bankrupt and their property has been taken over by the banker. Likewise these plantations are being divided into units of less acreage and sold to "small farmers." The "small farmer" in turn will no doubt carry on general farming, placing emphasis on the production of his supply crop. When the rice farmer learns to produce a greater variety of products in order to supply home needs, when the Intracoastal Canal and good roads bring about cheapened freight rates, then will he be able to sell his produce at a lessened cost, thereby enabling him to market more rice in foreign countries.

Even tho Acadian South Louisiana now bears a distinct interest to the traveler, one can already see the beginning of evolution among these practical people who will in a few generations become amalgamated with the American and Creole element and lose much of the provincialism now so prevalent. However, religion and the clannish nature of these people, the strongest ties, have created bonds that will last for a long time.

A DRAMATIZATION TO VITALIZE GEOGRAPHY TEACHING*

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From the time of primitive man to the present time, the urge to dramatize has persisted. This instinct is particularly strong in children, and the modern teacher, ever desirous of utilizing any approved means of stimulating interest, has found that dramatization is a valuable ally. Much of the value of dramatization lies in the interest which it creates, the meaningful experiences which it provides, and the pupil participation which it makes possible.

A rather advanced group of fifth graders finished the study of the countries of Europe, and had time the latter part of the year to take up the study of the British Empire as a series of problems and projects.

As their study proceeded the children were particularly interested in the fact that British ships carried British goods to all parts of the world and brought back to the mother country the wheat, meat, sugar, coffee, and other foods that its people needed. They were impressed, too, with the fact that raw materials used in Britain's factories came from all parts of the world.

After a series of problems involving much reading, map and picture study the children took stock of the vast amount of interesting facts and information they had collected. At the same time the children became cognizant of the fact that their annual chapel program was only a few weeks off. Finally after much discussion stimulated by skillful suggestions on the part of the teacher, the children brought this question up for discussion. Could all this interesting geography material on the British Empire be organized in some attractive way and be made to serve as a chapel program? This organization finally took the form of a dramatization called "John Bull's Family Reunion." In this play the children tried to show dramatically to the audience the important part Great Britain plays in the industrial and commercial interdependence of the world.

The children planned and made their costumes in art class and

* Miss Oleson developed this as an "Interest-Stimulating Device" and found it very helpful for that purpose.—Editor.

also for stage decoration made the merchant marine flags of the countries represented. They learned the British National hymn and other British songs in their music class.

In their English class the pupils practiced the play, keeping in mind that their aim was to show dramatically to the audience the important part Great Britain plays in the economic interdependence of the world.

The following playlet given by this fifth grade illustrates how dramatization may be used as a means of making geography material more real and vivid and of giving training in problem solving, and in oral, written and dramatic expression, at the fifth grade level.

John Bull's Family Reunion

I. Characters: John Bull, Canada, India, Guiana, Australia, Africa, New Zealand, France, Brazil, Chile, Argentina, Peru, Norway, Sweden, Italy, Greece, Spain, China, United States (Uncle Sam), Messenger.

II. Scene opens with Great Britain (John Bull), Canada, Australia, India, Guiana, and South Africa assembled for conference.

John Bull: Well! Well! I am so glad so many of my children could come! (*Smiles and looks around*) But where is New Zealand?

Australia: I had a cable from it just before I left, saying that it hadn't quite finished shearing its sheep so would be a day late. I imagine it will bring along some of that prize New Zealand mutton.

John Bull: Fine! New Zealand mutton is very popular in England and I am glad it is bringing wool. I was over at Bradford yesterday and they needed more wool for their fine broadcloths. But we needn't worry as long as Australia and South Africa can also send wool.

Well, children! We'd better get down to business. As you know we have a serious problem before us. There are about 47,000,000 people in these Isles and we can't raise enough food to feed all their hungry mouths. Also, my power in the world is largely due to my manufacturing industries. I *must* have raw material for my factories! I wonder how many of these my own children can supply?

Canada: Well, if you need any wheat or lumber I think I can help you out. Our wheat is of an unusually fine quality and we raise much more than we need.

John Bull: Indeed we do want your grain and lumber. How about

us sending you some warm woolen goods to keep your children happy during the long Canadian winters?

Australia: I can let you have some wheat, too. Had you thought of asking Uncle Sam if he could furnish some more? I hear he had a fine crop this year.

John Bull: Australia, that is a fine idea! I'll send a message to my good old friend right away. (*Taps a bell and a messenger appears*) Send a cable over to the United States and invite Uncle Sam to our reunion. You know, daughters, Uncle Sam seems almost like my own son! Ah! Well! I wish I had a cup of tea.

India: Tea! Don't forget that I am here! I can send you some tomorrow.

John Bull: Well, every little helps. You know my people are very fond of their afternoon tea. China is on its way over now with a load and with this I think we can get along. By the way, India, include some of your jute and leather, and in return don't you need some cotton cloth and farm implements?

India: Yes, I do. My farmers are improving right along. And have you heard about our methods for irrigation? I believe that in a few years we will add many acres to our farm lands. We have you to thank for that, John Bull!

(John Bull smiles and bows)

Guiana: Tea always makes me think of sugar. May I offer you some for your afternoon cup? (*Hands John Bull a package of sugar*)

John Bull: Thank you, my daughter! Now what may I give you in return for all this sweetness?

Guiana: I would like some colored calico if you will promise me it will not fade. You know it is very hot and rainy and the sun shines brightly where I live.

John Bull: (*Lifting his head and speaking proudly*) Don't you know that my cotton textiles are an important reason for my greatness? Take a visit to Manchester before you go home!

(All the children look impressed)

Africa: (*Timidly*) Please may I speak? Did you know that we produce about two-thirds as much gold as the rest of the world put together? I can bring you gold, bananas, oil seeds, and diamonds. I believe your people would like them. (*Offers the articles to John Bull who looks them over carefully and approvingly.*)

John Bull: Very good, Africa! We must have beautiful as well as useful things! Now what can we give you in return?

Africa: We should like clothing and machinery if you have them.

John Bull: You shall have them. I am delighted that your people have started to wear clothes and use machines.

(Knock is heard at the door)

Come in!

France: (*Enters hastily*) The radio brought the news that you were discussing the problem of getting food and raw materials for your people. At once I said to myself, "I should be at that conference. I'll just fly across the English Channel and look in on the meeting. I stopped first at Brittany for some dairy products. I can recommend this butter, John, and these fresh vegetables! Then you know how proud we are of our beautiful silks. I just happened to put this beautiful piece in my traveling case. Don't you think your ladies would like silk dresses? Our wines, too, are the world's choicest.

John Bull: Indeed I want them all! You are a fine neighbor, France. I have already sent you the machinery and coal you ordered.

France: Excellent! I must see about the deliveries. Enjoyed the conference. Au revoir!

India: (*Looks out of the window*) It looks like rain. That reminds me, have you laid in your supply of rubber? I can send you a little for your rain coats and rubbers even tho you can get the bulk of your supply from your cultivated rubber plantations in British Malaya.

John Bull: A thoughtful child you are, India. We need raincoats and rubbers in this climate. Rain without rubber brings influenza. Ha! Ha! And now where are our friends from Latin America? They were invited to attend the conference. Cable them again. Tell them we need them.

(A big noise is heard outside. New Zealand rushes in with a basket of wool)

New Zealand: Am I very late? Oh, I am so tired. I thought I'd never get thru shearing those sheep and packing this meat. I heard you were in great need of the wool. That's why I hurried so! I brought the butter and cheese, and some apples, too.

John Bull: I am surprised that you are tardy, New Zealand, in view of the progressive government which you have. However, I am glad to see you! I heard that you needed cutlery and ging-

hams. I have them all ready for you. By the way, I hear that you have no poor houses in New Zealand. Will you explain that to me tomorrow after dinner?

Canada: (*Looking out of the window*) Our friends from Latin America are arriving.

Messenger: Misses Brazil, Argentina, Peru and Chile.

John Bull: Welcome friends from Latin America! We needed you at this conference.

Brazil: We are glad to be here. Now what can we do for you? Here is some rubber for your raincoats, rubbers, etc. This is very fine rubber, John. You know I led the world in the production of rubber until those upstart countries in southern Asia took the lead. Well, as I said to Peru coming over, "The world is constantly changing and so are we." You look a little seedy, John. Better take some of this sarsaparilla as a tonic to build you up. It came from my Amazon jungle. Our coffee would stimulate you, too, and our oranges supply you with vitamins. You do want some of our cotton and sugar, too, don't you? Good, now I'll tell you what I need. First of all, I need some farm implements. We are interested in farming in Brazil and I want my farmers to have the best I can provide. I'd also like some of your locomotives, steel rails and textile mill machinery, for we are making rapid strides in Brazil.

John Bull: All right! Fine! We'll fix you up and you fix us up.

Chile: I heard you did intensive farming. I wonder if you don't need some nitrate for your lands, and some copper for your wires and some wool for your mills.

John Bull: Yes, yes.

Argentina: And I have three products I know you need. Wheat, meat, and wool! I'd like to have a return cargo of coal, machinery, and cotton goods.

Peru: And here I am with a small cargo of sugar and cotton. I, too, should like a return cargo of cotton goods and machinery.

John Bull: Thank you, thank you, kind friends. You shall have what you need. Several ships loaded with coal have just left Cardiff for South America. Manchester has a great supply of beautiful cotton goods for you.

Messenger: Norway and Sweden!

Norway: We had just started over to Belfast to get some linen when we heard of the conference. We then decided to stop by and see if we could help. How about using some timber prod-

ucts, fish, and a few Norwegian ships in carrying your commerce? The Norwegians always have been fine sailors.

Sweden: We don't have such a variety of products as you do, but we, too, can let you have timber products, butter, and cheese, also our high grade iron ore. Send in your order today and you'll have the iron ore in your furnaces ready to be made into steel in less than a week. We'll take your coal in return.

John Bull: I accept your offers. What would we all do without neighbors!

Italy: Here I am. I came for some coal and steel products so I brought along some cheese in exchange. I hope you all like it? (*Looks anxiously around the group*). I've some fine hats, too, and choice lemons.

Greece: (*Coming forward*) And I brought some olives and currants.

Spain: Please don't forget to order our oranges, almonds, iron ore, and wine. We had a fine crop of grapes this year. I have a number of barrels of wine ready to be shipped. If you put in your order I can send them right over.

John Bull: You certainly are friendly neighbors, all of you.

Messenger: Miss China!

China: I had a bad trip over. The sea was very rough but here I am. I brought you some silk and tea. Don't you think my silks are lovely? (*Holds up a length and shows to group*) You can make just as lovely ones out of our raw silk. Then you need some of our eggs and soy beans.

John Bull: I know my people will be glad of your offerings.

China: And I would like some of your coarser cotton goods in return. My people can't wear silk all the time.

(Sounds of some one whistling "Yankee Doodle." All look toward door.)

John Bull: What's that?

(Uncle Sam comes bustling in)

Uncle Sam: Howdy, folks! What can I do for you?

John Bull: (*Gets up slowly and comes over to shake hands with Uncle Sam*) Well! Well! If it isn't Sam himself! You are almost like a son to me, Sam. Maybe you can help us at this conference. We are trying to get a supply of food for our people and raw materials for our factories. We still need some wheat, meat and cotton.

Uncle Sam: I have a big family you know, but I think I can help you out. My Central States have wheat and meat and my Southern States have cotton in abundance. I need some things myself, too. My school children use a lot of chalk. Between you and me, John, I believe they waste it. I also need some of those excellent sharp knives you make in Sheffield like this one I got down at Wyckoff's. Then, too, I'd like some of that tweed you use for spring suits. My people love to dress. I want your linens, too.

John Bull: Thank you, thank you, Sam. We can make a trade right here. You are a chip off the old block.

Uncle Sam (*laughs heartily*): I must be hurrying. I want to run by and see France before I cross the Atlantic.

John Bull: Wait a minute, Sam. (*Pauses and looks around at people on stage*) This friendly conference has certainly been a success. Our problem of how to get food for our people and raw materials for our factories has been solved. What my own children cannot furnish, my good neighbors will. I am so happy, I feel like singing. Won't you, my children and good friends join me in singing the British National Song? (*All gather at front of the stage and sing, "God Save the King"* and *"Britannia Rules the Waves."*)

PORT CHURCHILL AND THE HUDSON BAY RAILWAY*

GEORGE PHILBIN

As acting Freight Agent of the Hudson Bay Railway here, I have been asked to reply to your letter of July 6, requesting information on the terminal here. We have no booklets of any nature pertaining to the construction of the 510 miles from The Pas, Manitoba, which is the southern terminus of the road, and I am, therefore, giving you a brief history of the road, and hope that same will be of interest to both yourself and your pupils.

The reason for the building of the road is due to the shorter distance by rail on shipments to and from Europe compared to the long freight haul to Montreal. For example, from Regina, Saskatchewan, to Liverpool, there is a saving of 1120 miles rail haul, but since the water haul from Churchill is 160 miles farther than that from Montreal, the saving is reduced to 960 miles. It is estimated that when the insurance underwriters give Churchill the same Marine rate as from Montreal, the farmers will save 12 cents on each bushel of wheat forwarded thru this port, which in itself is sufficient to pay for the building of the road and the terminals here, in five years.

Work was first started in 1911 but from then on it has been carried on in spasms, the road being nothing but a political football from start to finish, with the war intervening between the first portion built and the last 256 miles. Work was commenced in real earnest late in 1927 and the road was built to Mile 412 by October, 1928.

Here the first snag presented itself. From Mile 412 to the present end of steel, a distance of 98 miles, the ground to be covered was nothing but muskeg—no foundation of any kind for the support of the ties and steel—and the Barren Lands to be crossed from Mile 445 to 474—the most desolate and bleak portion of the entire road. Nothing is to be seen but muskeg as far as the eye can see; no trees or anything over six inches in height grows, and the land is well named. Engineers tried everything but they could not get sufficient gravel for ballast to hold the line, let alone keep it on the surface when heavy trains were running over it. Finally some

* Excerpts from two letters written by George Philbin while stationed at Port Churchill, Manitoba, in 1932, in reply to a letter from a Chicago correspondent. Excerpts arranged by Cora P. Sletten, Assistant Editor.

bright young cub of a rod man on an engineering outfit asked, "Why not lay the ties and steel over the frozen muskeg in winter and rush ballast in before it has time to thaw out in the spring? In this way the ground underneath will remain frozen forever." This was tried and the result such a success that over two thousand men toiled day and night during the winter of 1928-29, facing blizzards which raged for weeks on end; facing a bitter cold, when the thermometer went down to as low as 60° below zero for over a month, but their pioneering spirit not only survived but successfully carried out their work,

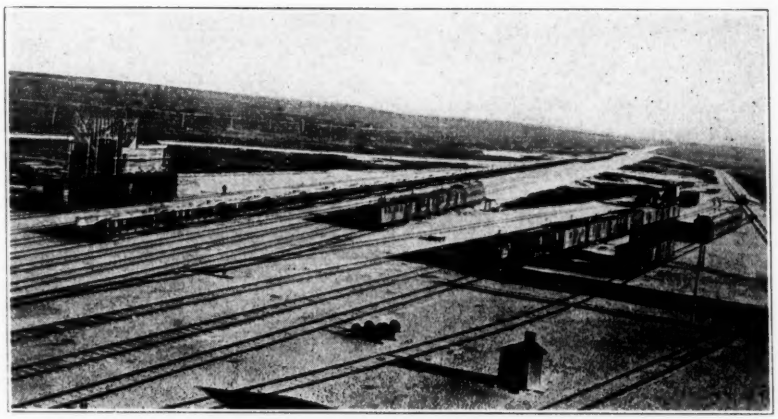

FIG. 1. The railway yards and landscape at Churchill.

with the result that steel reached tidewater on March 28, 1929. Thus the first phase of the road was finished.

Early in 1929 the Dominion Government let the contract for the building of the 2,500,000 bushel elevator and work was immediately resumed on the road to get it in condition for the rush of inward freight for construction purposes. The summer of 1929 was spent mostly in surveying and bringing in supplies for the Dominion Government Department of Railways and Canals for the dock work, crib work and dredging necessary. In May, 1930, the contractors started in to build the elevator and by the fall of 1930 the entire foundation was laid, and the first story of both the work house and the elevator done. Early in 1931 the power house was built and the elevator itself completed by August. The Saskatchewan Wheat Pool then arranged for a trial shipment of 500,000 bushels to England and the steamers *Farnworth* and *Warkworth* not only made the trip in record time compared with Montreal, but the expense of the trip and the ease with which the Hudson

Straits were navigated showed that the building of the railway was no pipe dream but a sound business proposition and one from which much could be expected, provided it received proper support from the three prairie provinces of Manitoba, Saskatchewan and Alberta. Captain Mouat of the *Farnworth* reported that Churchill was the second best natural harbor in the world, naming Rio de Janeiro in South America as the first, and also stated that he would far rather sail into Churchill than up the river to Montreal, which, in itself, was a real boost for this place.

This year to date, we have 2,300,000 bushels of wheat in the elevator, the first boat, the *Pennyworth* is due around August 7 and it is expected that from 4,000,000 to 10,000,000 bushels more of wheat will leave from here before navigation closes at the end of October. In addition to the wheat, we have three boatloads of cattle and one of the different packing house products, such as cheese, butter, eggs, bacon, and ham, while the first three boats to arrive are all bringing in cargo from Europe for the various wholesale houses in Western Canada, which makes it a two-way traffic and, of course, more profitable to the steamship companies.

Churchill, Manitoba, July 20, 1932.

I am so glad that my letter finally reached you—was afraid that it had gone astray. You see, up here we have no Post Office and all mail is forwarded in open bags, addressed to the Postmaster, The Pas, Manitoba, for forwarding Royal Mail from there, and it is so easy for letters never to go any further than the first nosey parker along the line who cares to allow his inquisitiveness to overcome his natural honesty.

I am so sorry that the only map we have of the line was compiled in 1925 when the terminus was Port Nelson, and we have had to trace the line from Mile 356, where it branched off to Churchill, and it is not very authentic.

And now for Churchill proper. As I no doubt explained, the capacity of the elevator is 2,500,000 bushels, which does not seem hardly enough in view of the success we are having. There is considerable agitation all over the Prairie Provinces to have the elevator enlarged so that it can store 10,000,000 bushels but with no noticeable success up to the present writing. Four unloaders are used in unloading the cars and they are as nearly human as is possible for any machinery to be. Each unloader is capable of handling twelve cars an hour, making the capacity of the place forty-eight

cars an hour, roughly speaking about 65,000 bushels, or 650,000 bushels a working day.

After unloading, the cars are picked up by the switch engine and placed on the main line, waiting for the train to be made up and rushed South. The grain in the meantime is rushed by conveyor belts to the elevators, is weighed, then dumped into whatever bin is allotted it, depending on the grade and the consignee.

Whenever a boat docks, the grain is again weighed and travels by conveyor belts along the conveyor gallery to the docks, where twenty-three spouts are available for loading ships, three at one

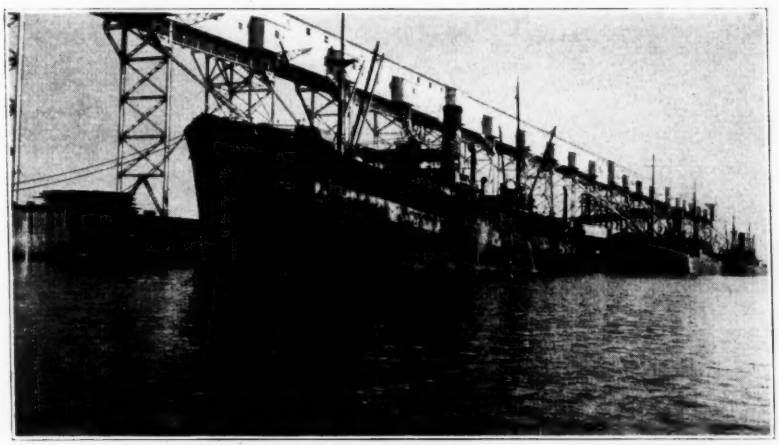

FIG. 2. Three vessels loading at the elevator.

time being the capacity of the dock at present. It was used in that manner the past week when the *Pietro Campanella* from Genoa, the *Brightfan* from Cardiff, and the *Rio Claro* from London, were all loading at the same time. The ships can be loaded at the rate of 72,000 bushels an hour, according to tests made last Thursday, and as the average capacity of the tramp steamers, usually employed in the carrying of grain, is 260,000 bushels, the loading takes a little less than four hours. It cannot be done in that time, of course, as the bins in the holds have to be trimmed, which takes far more time than the actual loading, but our record this year is 288,000 bushels in seven hours—not bad for an elevator working at capacity for the first time and the fact that the stevedors were all green men.

As the prevailing winds here are from the north and northeast, the fact that the elevator is built on the east side of the Churchill River, about one mile from the entrance to the Bay, makes

it an ideal site, and weather has very little effect on the water near the elevator, as it is always fairly calm and boats are in no distress when there is a storm raging. Last week we had a two-day gale, with the average wind velocity of fifty miles an hour, the maximum being sixty miles for over ten hours, yet the ships were being loaded as if there was not the least disturbance outside. The docks are 1850 feet long, and made of British Columbia cedar, creosoted to withstand rotting and are good for years to come without any repairing being necessary.

When constructed, the townsite will be modern in every respect, including central heating, a big item up here with our long and severely cold winters. All buildings are to be completely fire-proof, and no one is allowed in the place unless financially capable of carrying on a legitimate business. Land titles are mainly in the hands of the Provincial Government and are to be leased to the various individuals or companies who intend opening up places of business here. This eliminates real estate gambling and gives everyone a fair chance of being able to start and carry on in an equal manner with his rival in trade. At present the townsite is undergoing its final survey, and we expect that next year will see it thrown open to the waiting public. At present there is not a building on the place except on the northwest corner where the United Church stands.

The real difficulty is the water supply. Lake Rosabel, our only source of fresh water is three miles out, and the problem of bringing it to the town during the winter months has been the subject of a deep study by engineers all over the Dominion. Their final decision is that it can be piped from the lake by ordinary pipes, mounted on creosoted fence posts four feet high. Muskeg is then brought in from Mile 486 and placed to a width of twelve feet at the bottom, eight feet at the top, and eight feet high. Muskeg is really the best form of insulation as it keeps out both heat and cold, and all engineers are of the opinion that there is sufficient resistance from both frost and heat in the amount of muskeg used to guarantee running water, even tho the mercury falls to 65° below zero, which frequently happens here in January and February. Tests were made for the sinking of wells here but the drill broke when one hundred and ninety-two feet down, and it was still solid frost or ice, which means that it is frozen down to an unknown depth.

The radio station here is one of the most powerful in Canada, and is of great assistance to the ships entering and leaving the Straits. Due to the close proximity of the Magnetic Pole, the com-

pass is next to useless and the radio stations then show their value. In addition to the one we have here, there is one at Nottingham Island at the entrance to the Straits from the Bay; one at Cape Hopes Advance midway in the Straits, and one at Resolution, at the Atlantic entrance, while four hundred miles due north of here, at Chesterfield Inlet, is a new one erected last year, which gives the direction finding apparatus the much needed cross current and enables them to check their position. Unless the ships have a cross current they can find their way thru OK but they have no means of telling just how far they are from the station they are working with, whereas when working with two stations the cross-currents enable them to guage their distance from the place to which they desire to go, using geometrical equations.

At present all the work done on the docks and the town site, also the dredging and pipe line work, is being carried out by the Department of Railways and Canals, under the superintendency of Mr. G. Kydd, who was second in command in the building of the Welland Canal. The railway was built by the Construction Department of the Canadian National Railways, and they are handling same, apart from the Canadian National, and practically all positions are by appointment, some of the men coming from Nova Scotia, some from British Columbia—nearly all hand picked and remarkably free from political patronage usually so prevalent with any Government project.

Our season this year was supposed to end September 30 on account of the insurance rates, but strong representations are being made by the Dominion Government to Lloyds, London, who write insurance for all ships and I understand that the next two boats, the *Juventus* from Torino, Italy, and the *Pensilva* from Barry, Wales, are more in the nature of a test than anything else, tho they will carry a full cargo of Western grain at the same rate of insurance as has been in effect since the opening of navigation on August 1. Our contention is that the Bay and Straits are far safer in October and the early part of November than they are in August as the danger of field or pack ice is far less than in August, and the season has not advanced far enough to have any new ice of sufficient thickness to impede navigation.

At present we are only shipping wheat, altho a trial shipment of two carloads of flour went thru successfully on the *Pennyworth* and more is in prospect for next year, including flour from the Gold Medal Mills in Minneapolis.

I almost forgot to mention the incoming cargo carried by the *Pennyworth.* It consisted of practically every known commodity imported into Canada from Europe. The main items were barbed wire, machinery, candy, laces from France and Belgium, whiskey from Scotland, binder twine, iron, chinaware, and a large number of small shipments.

At present we are fairly busy with this year's crop coming in. We have at 8:00 P.M. date, exactly 529,803 bushels in the elevator, but the two incoming ships will take 270,000 bushels each, which meant that 11,000 more bushels were rushed in, same arriving tonight, while late advices over the wire announce the sailing of one more boat from Italy, the *Gratias,* which will mean an additional 275,000 bushels for export. When all shipping is over the elevator is being filled to capacity for winter storage, same being granted free by the Dominion Government. The current rate of storage in any line or terminal elevator is one-sixtieth of a cent a bushel a day, which does not seem very much, but when one considers that the daily saving here thru having free storage is $416.00, you can see why the grain is being stored here, despite the fact that it cannot be shipped until late next July. The Continental Grain Company and the Louis Dreyfus and Company, both of New York, are storing 2,000,000 bushels between them, while the Saskatchewan Wheat Pool is responsible for the remaining 500,000 bushels. The above practically means my remaining here until late in December, or if the movement is not as rapid as expected, until the end of January, when I will close my books until I return in May and prepare for another year of hard labor—lucky thing to be able to say these depression days.

Usually I work in The Pas, Manitoba, during the winter months but this year, as I did last year, I intend going home for three months. When one is stationed in a place such as this is, with no amusements of any kind, only eleven women to look at, talk to and they married, he soon loses touch with all manners and the conventions, tending to make him a rough-neck when he does go to civilization, so that, going to a city like Montreal for three months will help keep me from becoming what is known here as being "Bushed" —simply an unnatural shyness and hatred of company and anything modern, and is the first step toward insanity, which is really the reason why so many trappers go crazy and either commit suicide or commit some dreadful murder.

Churchill, Manitoba, September 26, 1932.

GEOGRAPHICAL ACTIVITIES INVOLVING THE USE OF MAPS AND GRAFS

RUTH WEAVER MIKESELL
Oak Park, Illinois

Two years ago an experimental study of geographical activities was made at the University of Pittsburgh. The purpose of this study was to determine whether activities involved in the use of maps, pictures and grafs used singly are more effective in the teaching of geography than a combination of the same activities. Among other things this investigation was also concerned with measuring achievement obtained thru the use of these selected activities. The result of this study revealed that geographical activities involving the use of maps, pictures, and grafs are effective in the teaching of geography. Also that a combination of these activities for group study is superior to maps, pictures or grafs used singly. The study of the effectiveness of pictures will be considered in another paper. The subject of this paper is, "Geographical Activities Involving The Use of Maps and Grafs." This is a very large subject, but in the short time* at my disposal, I shall endeavor to develop three main points.

First: What is a geographical activity involving the use of maps and grafs?

Second: What methods are most effective in teaching correct concepts of maps and grafs?

Third: What are some worthwhile map and graf activities which can be used geographically?

GEOGRAPHICAL ACTIVITY DEFINED

Now as to the first point namely, "What is a geographical activity involving the use of maps and grafs?" There are hundreds of activities that might conceivably be used in connection with the study of maps and grafs, many of which have no geographical quality whatsoever.

By a geographical activity is meant any state of action, mental or physical, which leads to the understanding of the relationship existing between man and his natural environment. This does not for the most part mean a program of manual activity. The actual

*Limited to twenty-five minutes at the Evanston meeting of the National Council of Geography Teachers.—Editor.

drawing of an outline map of a country, state or region requires considerable skill and time. The only thing obtained from such activity is the general form which at best is usually not sufficiently accurate to give a correct concept. The placing of symbols on an outline map showing the different kinds of work in the southern states assumes geographical quality if it is used in explaining how man has made use of his natural environment. The construction of a graf showing the number of people living in the various sections of the United States becomes a geographical activity if it is used in raising problems as to why some regions have a dense population while other regions have a moderately dense or sparse population. If the children are taught how to make a graf and are given a list of the statistics in round numbers for this activity, the little time required for this work is well spent and purposeful. Furthermore the child has taken a part in making a useful record. Therefore, from this point of view, the drawing or construction of a graf as an end in itself is not a geographical activity. Geographical activities involving the use of maps and grafs are then, activities using maps and grafs in such a way as to bring about the understanding of how man has made use of his environment.

Perhaps a keener and clearer understanding of just what is meant by this often misused phrase "geographical activity" will be conveyed by giving a few other examples illustrating what such an activity is—and what it is not. For example, recently a seventh grade class in geography was observed where the core thought of the unit of work was labelled, "In what way do geographical controls help to explain the occupations, political development, political attitudes and migration in the United States?" The exercises which were given to the class to bring about this understanding were those involving textual reading materials and chiefly the construction of maps. The map activities called for (1) a map showing the distribution of population in the United States, (2) a map showing the length of the growing season in the United States, (3) a map showing temperature conditions in the United States, (4) a map showing the amount and distribution of rainfall, (5) a map showing the political divisions, (6) a map showing the surface divisions and (7) a map showing the twenty-five largest cities in the United States. Incidentally, the statistics which were available for this last map were from the 1920 census. After a week of labor during which time the children copied scores of paragraphs from their textbooks in order to answer a series of questions which were given on

the unit, and had made seven glorified copies of maps using every color of the rainbow, there was not one student who could answer the problem correctly. Upon questioning the student in this class who handed in what appeared to be the best paper on the unit, it was found that she had spent the class period of an hour each day for a week on this work. In addition she had worked every evening after school from 4:30 to dinner and after the dinner hour to 10:30 or eleven o'clock for several nights. She had spent two hours making poor copies of each of the seven maps and had finished her activities not knowing the meaning of the understanding to be arrived at. The work involved in copying the seven maps was not geographical activity, but busy work and for those who disliked to make maps it was nothing but punishment.

Many phases of this understanding could have been arrived at by means of geographical activities involving textual reading material and maps if it had been carried on in a different manner. For example, if the children had been asked to sketch on an outline map the areas having less than twenty inches of annual rainfall and had been asked to draw or color upon this map, the places where irrigation is carried on in the United States, this map would then have shown to the children that there is a definite relationship between irrigation projects and areas of light annual rainfall. In developing the subject of political attitudes mentioned before, the teacher might then have asked the following questions. "Would you expect Congressmen from Louisiana or Florida to sponsor a law providing for huge government expenditures for developing irrigation projects in their states? Why or why not?" "From this map, what states would you expect to be interested in Federal aid for irrigation?" In a unit with so many things to develop the children should have spent no time in the tedious mechanical work of making sketches of maps to which they already had access. The principal idea is that unless map activities help to bring about the understanding of relationships they cannot be called geographical activities.

EFFECTIVE TEACHING METHODS

The second point is, "What methods are most effective in teaching correct concepts of maps and grafs?" This point can best be understood by an illustration showing what may occur when the children reach the seventh and eighth grades without having been given definite concepts of the various symbols which they find on their maps.

In another instance, the activities of an 8th grade class in geography were observed in which the students were working on a unit. For this unit of work, the children were given guide sheets. In spite of the guide sheets the teacher was kept busy answering questions such as the following: (1) What does sparse mean? (2) Do the words dense and sparse mean the same thing? (3) The picture in Fig. 100 shows low land in Western Kansas and the map indicates that it is 2,000 feet above sea level. Which is correct, the map or the picture? What does annual precipitation mean? and many other questions. It was suggested to the teacher that the class did not know the meaning of many simple map symbols, but she insisted they knew how to read the keys well and accurately. The following day the children were tested on the meaning of symbols which the 1932 Geography Yearbook includes for level one and two suggested for fourth and fifth grade mastery. This test was administered to all the students in the seventh and eighth grades. Sixty-seven per cent of the group failed to recognize sun behavior lines, only 76 per cent of the class recognized the true meaning of 20 inches of rainfall, a large percentage of students thought that 20 inches of rainfall meant that the rain soaked into the ground to a depth of 20 inches. Twenty-five per cent of the students failed to understand the height of land above sea-level. Most of the errors resulted in the children believing that the height of land above sea-level could be measured by the height it extended above the lowest land in the immediate vicinity. These are just a few examples of errors these seventh and eighth grade children made in what should be mastered in the fourth and fifth grades. Children cannot be expected to use tools geographically unless they first have a knowledge of that which is symbolized and have the ability to visualize the landscape symbolized.

When children begin to study maps, they are studying a new language, a language which is as new and strange to them as the printed page to the beginning reader. If you were to visit many first grade reading classes, you would see pictures displayed in which printed words explain the meaning of the pictures. The children may see a picture of rain with the caption rain. With this knowledge the teacher does not expect the children to read "The annual precipitation for southern Florida is 60 inches a year." This practice would seem absurd in reading classes, but practices equally absurd are frequently carried on in geography classes. A picture of a river with the symbol which is used for a river on the

map, a picture showing a city with a caption of a dot, a picture of a coast line, a lake, a mountain with their respective symbols, would be valuable in teaching map language as pictures with written captions are valuable in giving concepts for the printed words.

Map symbols should not be introduced until the children have an apperceptive background which can be symbolized. For example, if you are introducing the map symbol for a mountain, you should first tell the children vividly and accurately how mountains would look if you were very near them and how they would appear if you were in an airplane several thousand feet above the mountains. The teacher should explain why it is impossible to portray mountains on a map like those shown in the pictures. Whenever possible the teacher should bring out the similarity of the symbol used with the actual thing symbolized, and in this case, how mountains might appear on a small map which represents a large area. Each map symbol must be developed clearly and accurately and step by step the children must be trained to read and interpret maps. The children should not be expected to read or use any map symbols of which the real meaning has not been taught. But once taught, this information should be used whenever it can function effectively. In the fourth grade, or level one, most map symbols are introduced. If they are presented in the before mentioned manner, the children will not only get locational facts when needed but will have concrete images of lakes, mountains, cities, coastlines, etc., when they see or read the symbols from the maps.

In fifth grade geography or in level two of geography training, about as many different maps are introduced as symbols are introduced in level one. Somehow, many fifth grade teachers seem to believe that children who have had one year of geography training can interpret all maps by means of their legends or key—or they believe that the textbooks are so written that the children will know and understand the meaning of the different map symbols, without additional teaching. The teachers themselves are sometimes not equipped to teach the use and understanding of maps. Many textbooks containing wonderful sets of maps could be used more effectively if the responsibility were taken either by the teachers or by the authors of the books, of developing map symbols at the level of the student. Since many of the maps introduced at this level are used thruout their geography work and the activities involved in the use of them become increasingly complicated, great care should be taken introducing them properly.

The same care must be taken in the introduction of grafs as is taken in the introduction of maps and map symbols.

Graf work should begin when there is a need for comparison. Usually simple grafs are introduced in the fifth grade or in level two. Here they must be developed gradually and carefully. The child does not understand why long lines on a chart mean 500,000 bushels of wheat or 200,000 men as the case may be. The numbers which are given for grafs should be round numbers and easily divided. Stick men placed in rows may represent people. They may be represented by dots and later by lines. An effective exercise in developing grafs is to give test tubes to 4 or 5 children representing the wheat production in United States, Canada, Russia, Argentina, India, etc. Have the children measure wheat and fill the test tubes with the grain. A thimble may be used for 100,000,000 bushels. When each country has the correct proportion the children can readily make the comparison. After the exercise they should be shown a vertical bar graf showing the wheat production of the largest wheat producers.

Altho pictorial grafs can perhaps be understood more readily than others, it is necessary to keep all figures the same proportion. You, no doubt, have used pictorial grafs in which the United States production of swine is pictured with a large animal while Italy near the end of the graf has a small animal, and received the answer that hogs are raised in the United States, pigs in Italy. These exercises have been tried on many students and almost invariably the answers have been: Cows are raised in the United States, and calves in Australia; sheep are raised in Argentina, lambs in India, or small pigs in Italy and larger pigs in the United States. Vertical and horizontal grafs are more easily read than circular grafs and should be introduced first. As a matter of theory the point here is simple and obvious. In introducing maps, map symbols and grafs, they must be taught and presented in such a way that the child will actually know and be able to visualize the reality behind the symbol. The only difficult thing is the practical and successful application of the theory.

WORTHWHILE ACTIVITIES

The third and last point is, what are some worthwhile map and graf activities which can be used geographically? In the past, the chief use of maps was to obtain locational facts, but in the present scheme of modern geography this is no longer true. Place geog-

raphy, as it is sometimes called, teaches valuable information, but this information should not be obtained by looking up isolated facts and by constant drills. Map activities which show the relative location of one feature with regard to another in explaining how natural items help to explain cultural items, are valuable activities. The association of the locations becomes fixed and meaningful and place geography becomes a by-product. When locational facts are taught in this manner, it has been found that the children have more place geography than under the old scheme of teaching.

When the children have been taught how to use maps, such as, estimating the relative distance without a scale of miles, finding the relation of one region to another or to the world as a whole, or when symbols have been taught portraying concrete images, the information thus gained can be used repeatedly in new situations and becomes a basic source of geography material. In other words, after maps have been used, they can be presented at the outset of a unit of work and the children can apply the information they have previously learned at this juncture of their study. Maps may be used as a valuable means of testing, checking and summarizing. Information gained from maps may be used in building landscape imagery. Maps may be used in testing geographical information. They may be used in checking information gained from any basic source of geography materials. Maps may be used to summarize and may also be used as a means of geographical expression.

The following series of activities illustrate some of the ways maps may be used in the classroom for some of the various purposes just mentioned.

1. In reading information from maps, the following type of questions may be used. On your physical map, Figure —— find New Orleans. What two reasons does this map suggest as to why New Orleans is an important city?

2. In checking the children might be asked questions such as these: What does the graf tell you about the amount of corn produced in Iowa? Turn to the map, Figure ——, and find this corn producing region.

3. In naming and developing a new concept the following type of exercise may be used. In the picture in Figure —— you are looking at a waterfall near Cairo. Find the sign on your map which stands for a cataract or waterfall.

4. In using known map symbols to answer questions in new situations, the following is an example. What do the maps in Figures

—— and —— suggest as to why you might expect grazing to be carried on in this section as well as in Western Kansas?

5. In using maps to raise a question or problem, questions such as the following are effective. Find Norway on the map in Figure ——. What does the map tell you about the number of cities in Norway having a population of a hundred thousand people or more? The area of Norway is more than four times that of the two North Sea Countries of Denmark and Belgium. From this fact, would you judge the population of Norway to be dense, moderately dense or sparse? Check your answer by turning to the population map in Figure ——. What problem then does this suggest to you?

6. In using maps to help answer questions raised, the following type of questions is an example. Find the latitude of Norway on your physical map. From the latitude of Norway what would you expect as to the length of the growing season? From what you have learned of the Gulf Stream Drift, where would you expect some farming? What does the map in Figure —— tell you about the iron and coal deposits of Norway? Find Spitsbergen. These islands contain valuable deposits of coal. Does your map in Figure —— suggest any reason why coal mining would be carried on under a great handicap in this vicinity?

7. In using maps as a summarizing exercise, directions such as the following may be given. On an outline map of Norway, print the following industries at the places where they would be found: fishing, lumbering, grazing, dairying, mining and manufacturing.

8. In using maps for application exercises a set of exercises such as the following are effective. On an outline map of the United States put "N's" in the

a. Great Lakes Region

b. Central and Pacific lumbering regions

c. Michigan, Illinois, Wisconsin and New York dairy regions

d. In the chief grain growing section of the United States.

From what you know about the Scandinavians, why would you expect to find many of their immigrants to have settled in these regions?

9. For testing maps may be used as follows. The maps on page —— are sketch maps of ten of the largest cities in the United States. Identify each city, or identify on an outline map of the United States, the twenty-five largest cities in the United States.

10. In reading information into maps, questions such as the following are effective in building imagery. On your physical map

find the city of Para. From the location of this city, what would you expect as to the length of the growing season? The length of day and night? Where would you expect to see the noon day sun in December? June?

Among a list of activities involving the use of grafs the following might be included.

1. Raising problems by means of grafs
2. Solving problems by the use of grafs
3. Checking information gained thru pictures or maps, or textural reading
4. Testing
5. Ability to take round numbers and turn them into grafs
6. Using grafs as expression activities
7. Using grafs in summarizing activities
8. Making comparisons
9. Reading facts of geographical import
10. Using grafs in building landscape imagery
11. Using learned graf information where it functions in explaining human activities

These activities as well as map activities if used alone or as ends in themselves have no geographical quality whatsoever, but assume geographical significance when they are used in bringing about the understanding of a relationship existing between man and his natural environment.

SUMMARY

By way of summary then, we have seen, in the first place, that not all activities involving the use of maps and grafs are geographical activities, and in order to use these tools successfully the teacher must have a clear, correct, and well defined concept and definition in his or her own mind of just what constitutes an activity having geographical quality. In addition the class activities in the use of maps and grafs must be guided by this definition.

In the second place in introducing maps, map symbols and grafs, they must be taught in such a way that the child will actually know and be able to visualize the reality behind the symbol. This involves skill and practical understanding on the part of both the teacher and the text author.

And in the third place, I have tried to outline or suggest to you some worthwhile types of map and graf activities which can be used geographically.

REGIONS OF MIDNIGHT SUN AND OF LONG NIGHTS

A Teaching Device

LUCIA HARRISON
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The following exercise has proved effective in making students familiar with the facts of the seasonal variation in the number of consecutive days of daylight and of days without daylight in relation to given latitudes in the polar regions.

Each student should provide himself with a calendar, preferably one having a page for each month and one for the entire twelve months. Post a chart that gives for different latitudes in the polar regions the approximate dates of the beginning and ending of the period during which the daylight is continuous and the period during which the sun can not be seen. Assign to each student a parallel of latitude and have him color on his calendar, in orange, the dates on which there is daylight the entire twenty-four hours, and in gray, those on which the sun can not be seen. This should be done on the monthly sheets and on the year calendar.

Hang up the calendars for the parallels of latitude that are having consecutive days of possible sunshine and for those latitudes that are without daylight. Calendars for parallels of latitude where the sun rises and sets each day should not be displayed. The pages upon which the entire year's calendar is given should be displayed on some days in order that a comparative study may be made of the relative lengths in various latitudes and of the time of occurrence in the northern and southern hemispheres of the three types of periods: (1) consecutive days of possible sunshine, (2) consecutive days without daylight, and (3) days on which the sun rises and sets. The hanging of the calendars in a row, with the lowest latitudes in the center, makes these relationships striking. Space in the classroom probably would not permit the calendars to be displayed for any length of time, but they should be put up for at least a part of a day each week. Such an exercise, spread over the school year, will clinch the facts of the distribution of daylight thru the year in the polar regions. The rationalization of these facts is a topic for study in senior high school or college geography.

Explain that darkness does not prevail over all parts of the earth upon which the sun is not shining, for over a belt about 1250

miles in width there is twilight of varying degrees of brightness. This belt covers a much wider extent of longitude in high latitudes than near the equator. In latitudes within a few degrees of the polar circles, the twilight may be almost as bright as daylight during the middle of those days on which the sun does not rise. An explorer in latitude 78°S., on a clear day, in late June, described the noon twilight as bright enough "to see to pick one's way about among the stones." As no one has remained at either pole, nor in latitudes near the poles, thruout the year, statements about light conditions there are based upon theory. It is computed that the sun cannot be seen from about March 24 until about September 20 at the south pole but that there is twilight for several weeks before it becomes dark enough for the stars to be bright. A similar twilight period probably occurs before the sun appears at the close of the sunless period. At the north pole, a very dim twilight probably begins about the first of February and brightens gradually until the sun comes above the horizon in March. After the sun disappears in September, there is a period of diminishing twilight before the coming on of darkness. At latitude 80°N., altho the sun rises and sets each day from about the middle of February until the middle of April, there is twilight the entire night from the early part of March until the sun ceases to set. The sun does not rise in this latitude from about October 23 to February 20, but each day there is a period of twilight which is brightest at noon. It is better, therefore, to characterize the dates colored gray on the calendar as days on which the sun cannot be seen, even if the sky is clear, rather than as days of darkness.

In computing the dates between which there are consecutive days with or without daylight, many factors must be taken into consideration. The dates given in the following table are approximate ones. Allowance has been made for the influence of atmospheric refraction in lengthening the period of daylight, and the sun is considered to be shining if any portion of it is visible to an observer whose eye is fifteen feet above the plane of the horizon. The table suggests that it is erroneous to describe the polar circles as absolute boundary lines between regions where the sun is never visible at midnight and those where it may be seen at midnight sometime during the year. On the island of Shishmaref, off the coast of Alaska, twelve miles south of the Arctic Circle, there is continuous daylight from about June 4 to July 6.

The following are the approximate dates between which any

portion of the sun remains visible for more than twenty-four hours and the corresponding dates whenever the sun remains invisible. Data are taken from *General Tide Tables for the Year 1916* published by the U. S. Coast and Geodetic Survey.

Latitude	*Daylight the entire 24 hours*	*No daylight*
66°N.	June 11 to July 1	
67°N.	June 2 to July 11	
68°N.	May 26 to July 18	December 11 to January 2
70°N.	May 16 to July 27	November 27 to January 16
72°N.	May 9 to August 4	November 18 to January 25
74°N.	May 2 to August 12	November 10 to February 2
76°N.	April 25 to August 18	November 4 to February 9
78°N.	April 19 to August 24	October 28 to February 14
80°N.	April 14 to August 29	October 23 to February 20
82°N.	April 8 to September 4	October 17 to February 26
84°N.	April 3 to September 9	October 12 to March 3
86°N.	March 29 to September 15	October 7 to March 8
88°N.	March 24 to September 20	October 1 to March 13
90°N.	March 19 to September 26	September 27 to March 18
66°S.	December 12 to December 31	
67°S.	December 3 to January 9	
68°S.	November 27 to January 15	June 10 to July 3
70°S.	November 18 to January 24	May 26 to July 20
72°S.	November 10 to February 1	May 16 to July 28
74°S.	November 4 to February 7	May 9 to August 5
76°S.	October 28 to February 14	May 2 to August 12
78°S.	October 23 to February 19	April 25 to August 19
80°S.	October 17 to February 25	April 19 to August 25
82°S.	October 12 to March 2	April 14 to August 30
84°S.	October 6 to March 7	April 8 to September 5
86°S.	October 1 to March 12	April 3 to September 10
88°S.	September 26 to March 17	March 29 to September 15
90°S.	September 21 to March 23	March 24 to September 20

INTEREST-STIMULATING DEVICES

GEOGRAPHY PROGRAMS EASILY ARRANGED, EFFECTIVELY GIVEN

The following programs have recently been carried out as special programs presented by the Geography Department of Sam Houston State Teachers College, Huntsville, Texas, before the entire college group.

What the Moon Sees as the Earth Turns

Introductory statement: The program represents what the moon sees as the earth turns. Something is shown you; much is left to the imagination. Look thru the eyes of the moon (which hangs high above the stage), and you may see something like this:

1. The sun as the center of our solar system. (Electric light center of stage)
2. The earth rotating on its axis and revolving around the sun. (One student rotates as the earth globe, while two other students move the table on which the globe remains with its axis pointing north.)

Obligingly the earth pauses at each of the four seasonal dates:

1. At Autumn Equinox to let us represent football in the person of a football star. (Who crosses the stage in football suit, and carrying a football, to the accompaniment of any stirring football tune.)
2. At Winter Solstice to represent ice skating. (Girl in sport suit, carrying ice skates. Music, "Jingle Bells.")
3. At Spring Equinox, to represent anglers out for a fishing jaunt. (Two boys with fishing rods. Appropriate conversation between them. Music, Mendelsohn's "Spring Song.")
4. At Summer Solstice, with a vacation group of girls, music, magazines, and mosquitoes. (Hammock, fans, spray, banjo, etc.)

Geographic Wax Works

Any number of actors, such as Chinaman, Japanese, John Bull, Uncle Sam, Toreador, French dancing dolls, Russian tap dancers, etc. Each character is immovable until wound up. Two attendants bring each character on a hand truck down stage center, and wind him up from the back. He thus becomes animated in any characteristic way by dance, speech, or other contribution to the program. The machinery may run down in the middle of such a performance, and require re-winding. After each number, the wax figure is trundled to another part of the stage where he remains motionless. Japan and China might start fighting, attendants not be able to regulate the machinery, quick curtain.

A Trip to Europe

Correlation of geography, music, literature and art

1. Reading, Masefield's Sea Fever.
2. Ireland enters and stands down stage, left, as The Wearing of the Green is played or sung. From Parnassus En Routeby is read the prose paragraph on Ireland, while another student puts into place an outline map of Ireland on an outline map of Europe, down stage, right.
3. John Bull enters and stands near Ireland
   Music, Hail Britannia
   Reading, prose paragraph
   Outline map of England added to map of Europe

4. France enters
   Music, The Marseillaise
   Reading, prose paragraph
   Outline map of England added to map of Europe
5. Germany enters
   Music, Watch on the Rhine
   Prose paragraph
   Germany added to large map
6. Switzerland enters, and stands center stage
   Music, Yodel Song
   Prose paragraph
   Outline map of Switzerland added
7. Italy enters
   Music, Italia, Italia Beloved
   Prose paragraph
   Outline map of Italy added
8. Other countries, as desired
9. Program closes with whole school singing one verse of Kipling's Recessional, God of the nations, spare us yet

HARRIET SMITH
ADELPHIA MITCHELL

Sam Houston State Teachers College,
Huntsville, Texas

EDITORIAL NOTES AND NEWS

In Maryland a number of trees have been equipped with lightning rods. Several of the trees had been previously struck by lightning but since the installation none have been struck altho in some localities some nearby trees were struck.

A new map of the Tennessee River Basin has recently been issued by the U. S. Geological Survey. It shows the character and distribution of the better-known mineral resources that are available for development under the Tennessee Valley Authority. Developed water power sites, including the Wilson Dam and the Norris Dam, are also shown. The cost is one dollar.

According to a recent release from the U. S. Department of Agriculture, the hazard in dry land farming in Montana can be materially reduced by following a program which has been tested by their experiment stations. It is not merely a question of keeping land fallow to store moisture for a succeeding crop, but the crop itself must be adapted to scanty rainfall and in event of a crop failure, the farmer must have enough surplus feed or capital to carry him thru the year of crop failure. Altho wheat which has been scientifically bred for the region and sown on land cultivated according to tried practices continues to be the mainstay of the region, the Department is encouraging dairying and the breeding of livestock. One of the new pastures recommended is crested wheat grass.

A recent bulletin from the Institute of International Education, 2 West 45th Street, New York City, announces a number of opportunities for graduate study abroad open to American students. Altho the average readers of this announcement are unable to avail themselves of this opportunity, it may be possible to mention such Fellowships to one's students, at least make known the fact that societies, universities, and foreign Government Ministries of Education make such studies possible.

According to Cyrus Longworth Lundell writing in Field and Laboratory (Dallas, Texas) November, 1933, on Chicle Exploitation in the Sapodilla Forest of the Yucatan Peninsula, the sapodilla is not suited to plantation culture because of its slow rate of growth and because its healing period between tappings is about five years long. Supervision of the chicleros' tapping methods, tho impractical to enforce, would help conserve the forest. Fortunately the demand for chicle has decreased since 1929, thus giving the trees a much needed rest period in which to recuperate.

HARLAN H. BARROWS, chairman of the Department of Geography, University of Chicago, has been appointed a member of the Mississippi Valley Committee authorized by President Roosevelt under the Public Works Administration. According to Secretary Ickes, writing in the February *Survey Graphic*, this committee is to review all projects for improvement existing in the Mississippi Valley under the Public Works Administration, and draft a policy looking toward the conservation of the Valley's soil and water. Problems involved in erosion, forestation, flood control, agriculture, navigation and power confronting the twenty-seven states located in this drainage basin will be correlated, and plans formulated for their solution, to the end that there may be a better economic and social basis of life for the present population of the Valley and of the generations to come.

Next June a stratosphere flight is to be made by Captain A. W. Stephens and Major William Kepner under the auspices of the National Geographic Society and the United States Army Air Corps. If successful, a second flight to check results will be made in September. The balloon is to have a gas capacity five times that used by Commander Settle. The ascent will probably be made in the northern great plains region in order to permit a large overland drift range. Samples of stratosphere air taken at various levels will be brought down for physical and chemical analyses.

On February 14 the scientific library of the late Professor U. S. Grant was formally presented by Mrs. Grant to the Department of Geology and Geography of Northwestern University. President Scott accepted it on behalf of the University. Dr. Grant was Head of the Department at Northwestern for thirty-three years preceding his death in September, 1932. About fifteen hundred bound and four thousand unbound volumes will thus be added to the departmental library.

A. W. Abrams, Director, Visual Instruction Division, State Education Department, New York, with the assistance of a number of specialists in their respective fields, has recently prepared a number of leaflets on these subjects: Abraham Lincoln (Study 31), The Grand Canyon (Study 35), John Burroughs and Some of His Essays (Study 63), Feet and Their Care (Study 62), Units of Study in Geography (Circular 6), Visual Instruction (Handbook 31), and The Four Seasons of the Intermediate Climatic Belts (Study R 1). Each leaflet contains a list of available slides together with a brief annotation of each slide. There are also circulars available for those desiring information on the regulations governing the lending of lantern slides, and for registration of schools wishing to use the slides. In Mr. Abrams' report for the school year ending July 31, 1931, is shown the ever-increasing demand for services from the Visual Instruction Division. More than a million slides were lent, an increase of 15 per cent over the previous year. Corresponding increases were noted in the number of schools, institutions and organizations making use of State slides.

The Georgia Warm Springs Foundation for Infantile Paralysis is located about 70 miles southwest of Atlanta. The normal temperature of the water from this deep-seated spring is 88°F. The site of the spring was known to the Indians of the region, and at an early date became a popular Southern summer resort, featuring an outdoor swimming pool. About ten years ago its waters were discovered to be peculiarly efficacious in the treatment of paralysis. Since that time the Foundation has been organized with accommodations for patients and visitors. No one in the active stage of poliomyelitis is admitted. There are three pools, one closed and one open for the under-water exercises of patients, and an open one for visitors. The mineral content of the water is very low, and its unusual properties are unexplained.

Did you know that you can drive your car over a four-mile highway from the mainland to the northwest entrance of Venice? You must then park your car in the 2,000-car capacity garage, and set out on foot or in a boat to reach places of interest, as the streets and bridges of the various islands on which the city is built are not adapted for automobiles.

A group of seventeen Argentine doctors, lawyers and teachers arrived in New York in January on a visit sponsored by the Instituto Cultural Argentino-Norte Americano. This organization plans to sponsor similar annual visits to the United States for the purpose of promoting better relations between the United States and Argentina.

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Dr. Stamp is Professor of Geography in the London School of Economics, University of London, and Director of the Land Utilization Survey of Britain. His contributions to geographic literature are well known in this country and are among our standard references. The most recent volume to appear is entitled "The British Isles." During the past three months Dr. Stamp has been pursuing field studies in South America. From April to October he will be engaged in land utilization studies in the United States.

St. Thomas: The Keystone of the Antilles. By Earl B. Shaw 131

Dr. Shaw is head of the department of geography at State Teachers College, Worcester, Mass. The article on St. Thomas together with other short studies, is a result of several weeks field work in the Virgin Islands during the fall of 1931. Following this field work Dr. Shaw served as visiting professor in geography at the University of Puerto Rico for the second semester of the school year, 1931-1932.

Physical-Economic Geography in Kansas City Senior High Schools. By M. H. Shearer 139

Mr. Shearer is an instructor in geography in the Westport Senior High School, Kansas City, Missouri. During the World War he served about one year in the United States Navy studying electricity and radio at Harvard University. In 1929 he took a year's leave of absence and taught meteorology and navigation in the Art Goebel School of Flying at the Kansas City Municipal Airport.

Map Projections as a Basis for Maps. By Guy H. Burnham 142

Mr. Burnham is cartographer in the School of Geography at Clark University, and has charge of the extensive map collection of the University.

William Morris Davis—An Appreciation. By Richard Elwood Dodge 148

In the Tea Gardens of Assam. By Ernest Young 151

Mr. Young was one of the pioneers in the teaching of human geography in England and is well known in America by his writings and by having served as visiting professor at the University of Chicago and the University of California at Los Angeles. This is the sixth article in our UNIT STUDIES series.

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